

Contribution ID: 75

Type: **Plenary**

The size of the Proton: Recent Results from the PRad Experiment

Wednesday, 19 May 2021 13:30 (30 minutes)

Two new extremely high precision measurements of the proton rms charge radius performed in 2010-2013 with muonic hydrogen atom demonstrated up to six standard deviations smaller values than the accepted average from all previous experiments performed with different methods (scattering and atomic spectroscopy) on ordinary hydrogen. This discrepancy triggered the well-known “proton radius puzzle” in hadronic physics. To address this puzzle, the PRad collaboration in spring of 2016 performed a novel magnetic-spectrometer-free ep-scattering experiment in Hall B at Jefferson Lab accumulating high statistics and a rich experimental data set. The specifics of the PRad experiment and the final physics results, including the extracted proton radius, as well as, the current status of the puzzle will be presented and discussed in this talk.

Collaboration

PRad collaboration at JLab

Primary author: GASPARIAN, Ashot (North Carolina A&T State University)**Presenter:** GASPARIAN, Ashot (North Carolina A&T State University)**Session Classification:** Plenary Session